DOCUMENT RESUME

ED 298 849 HE 021 840

AUTHOR Miselis, Karen L.
TITLE The Organizational Relationship between Planning/Institutional Research and Administrative Information Systems in Higher Education. AIR 1988 Annual Forum Paper.
PUB DATE May 88
NOTE 19p.; Paper presented at the Annual Forum of the Association for Institutional Research (28th, Phoenix, AZ, May 15-18, 1988).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Administrative Change; Administrator Responsibility; Administrator Role; *College Administration; *College Planning; Data Processing; Higher Education; *Information Systems; *Institutional Research; Management Information Systems
IDENTIFIERS *AIR Forum; University of Pennsylvania

ABSTRACT

Recent changes are examined in the organization and functions of offices of planning and institutional research and in the relationship between those offices and the offices in charge of administrative information systems or data processing. Recent changes of this type at the University of Pennsylvania are discussed. Its metamorphosis is compared to that of other, selected institutions in order to determine the success of problematic nature of certain changes and in order to analyze certain general trends: (1) planning became a formalized function in institutions of higher education in the early 1970s and has been developing rapidly ever since; (2) planning and institutional research have recently become decentralized in many institutions; (3) planning and institutional research staff have become much more expert in computing and interact to a greater extent with administrative computing units; and (4) university management information units themselves are changing and are concerned more with planning, decision support systems, user interaction and support, and management information systems. (KM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED298849

AIR Annual Conference

May 18, 1988

The Organizational Relationship between Planning/Institutional Research and Administrative Information Systems in Higher Education

Karen L. Miselis

Vice Dean for Planning and

Administrative Information Systems

School of Arts and Sciences

University of Pennsylvania

HE 021 840

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

AIR

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

for Management Research, Policy Analysis, and Planning

This paper was presented at the Twenty-Eighth Annual Forum of the Association for Institutional Research held at the Hyatt Regency Phoenix Hotel, Phoenix, Arizona, May 15-18, 1988. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Teresa Karolewski
Chair and Editor
Forum Publications Editorial
Advisory Committee

The organization and functions of offices of planning and institutional research have been changing rapidly as a result of ever-growing demands for strategic planning in all areas of higher education decision making and also as a result of enormous changes in information technology. While those changes are quite varied, one clear direction is toward greater involvement of offices of planning and institutional research in many aspects of institutional administrative information systems. There are several reasons for this change. First, offices of planning/institutional research are often the locus for more demanding requirements on access to, timeliness, and accuracy of data. Second, it is the case that while information technology has provided easier access to information, it has also raised increasingly more complex questions of confidentiality, appropriateness, ownership, and maintenance of information and information systems. These questions cannot be addressed solely within the domain of the data processing unit but rather, more appropriately, by a broad range of users of the information, specifically, professionals in planning and institutional analysis.

A second direction of change is that which has taken place in the offices responsible for administrative information systems. In most institutions, individuals involved in administrative computing have been serving a rapidly changing constituency with very different goals and demands and therefore have had to change their organization, functions and attitudes to adapt, survive and succeed. MIS offices tended in the past to work in isolation both from most users of data and from the planners and policy makers of the institution.

Over the past ten years, more and more central data processing units have faced very different demands coming from increasingly more

sophisticated users, who are less intimidated by information technology and more specific and exacting in their demands. Thus, the central units have learned to work more cooperatively with users and have discovered that the jointly developed products are often more satisfactory to both the users and the central unit as a result.

It is important to understand the significant changes that have taken place in higher education planning over the past five years. As educational institutions have moved into more complex and sophisticated institutional planning, it has become clear that they must move from their initial academic planning to business and strategic planning as well. By business planning I mean that institutions must plan not only faculty size and responsibilities, curriculum and research support, they must also plan the use of all the resources of the institution. With limited financial resources and little prospect of major increases in those, institutions must turn toward the more effective and efficient use of financial, human, and other resources in order to maintain their competitive advantage. By strategic planning, I mean that the institution must understand itself and the external environment so well that it can position itself to be ready to take advantage of opportunities or defend itself against external threats. Both business planning and strategic planning require more diverse and, at the same time, more integrated information to be successful. Both the advanced demand for information in these new forms of planning and the need to gain in efficiency and effectiveness have underlined the importance of harnessing and properly managing our most important resource; <u>information</u>. It is clear that better information systems will improve efficiency and effective management of the educational enterprise on a day to day basis.

Even more importantly, better and more appropriate information systems will provide the best foundation for institutional strategic planning and decision making.

Thus, planners and administrative information professionals are working more and more closely together to support the institution's strategic planning. They are working together not only to provide immediate information and analysis for decision support but also to plan the development of overall institutional information systems which directly relate to the institution's strategic goals.

I believe that Penn offers a fair representation of the changes taking place in higher education planning and administrative information systems. Like other private institutions, we have moved more slowly than some public institutions, because we had less experience with institutional research. While we have made our share of mistakes along the way, we have now established a structure and plan which should help us to move forward and take fullest advantage of our information systems, our most critical strategic resource.

In the 20th century, the University of Pennsylvania has undertaken three major planning efforts, in 1924, 1952 and 1972. While all three had an impact on the future of the University, there was never a sustained planning process in between each major review. In 1972, however, the report by the University Development Commission included two extremely important recommendations whose implementation resulted in significant permanent changes in the structure, organization and outlook of the University from that time forward. The Commission stated that "Planning and evaluation must become part of our regular academic existence if we are to maintain our

strengths and build a new future." and that "Fiscal responsibility in all operational units, academic and non-academic, is an essential first step in all planning for the future..."

Like many other institutions in the early 1970's, financial exigency as well as the Commission recommendation led Penn to adopt new budgeting structures and processes and to activate a true long-range planning process. Thus in 1973-74, the University implemented a responsibility center budgeting system under which each school or responsibility center earned its own income as well as a share of the University's general income and was responsible for all expenses, both direct - salaries, benefits, current expense - and indirect - a share of the cost of general administration, student services, energy and facilities maintenance. In response to the first Development Commission recommendation, the University and some of its schools established formalized planning structures and began planning processes. The University also established a central Office of Planning Analysis to support those efforts. For a long period of time, however, the progress made in planning was fitful and uneven.

Shortly after the arrival of a new president and provost in 1981, the planning process became much better defined and much more of a central focus of the institution. Budget responsibility shifted from the Vice President of Finance and Budget to the Provost and a new faculty/student Academic Planning and Budget Committee with the Provost as its Chair, was created to review the academic and budgetary policies within the context of long-range planning.

The new provost set a number of specific University goals which would then form the context for School five-year plans. Given their greater

financial independence and responsibility and this new mandate to proceed seriously with strategic planning, the largest schools in the University quickly developed a much greater need for planning expertise as well as support and information, and staff began to be hired for that purpose.

The planning which took place as a result of those initiatives, however, was primarily academic planning. That is, while the schools were required to plan, none of the administrative units of the University was asked to do the same. And while the provost had established his overall plans for the University, it wasn't completely clear how to integrate the individual school plans into the whole vision. In addition, the provost did not require a great deal of data and analysis in his own decision making. As a result, the University planning process was incomplete, and while individual schools and units began to demand better information and information systems, that demand was not as loudly heard from the provost.

In September 1987, Penn appointed a new provost who, as dean of the School of Art and Sciences at Penn, had believed in a comprehensive and strategic planning process and had very strongly felt the need for accurate, timely, appropriate data to support decision making. In fact, he considered information resources as such a critical need to the University that it became one of the seven major items on his planning agenda. At the same time, University senior management began to realize the need to proceed with business planning in the administrative areas of the University. Because of these changes, both the provost and the senior vice president as well as the president became convinced of the critical importance of the University's administrative information systems to Penn's strategic planning effort and really to the future of the institution.

The history of planning/institutional research demands made on institutional information systems have progressed at Penn in a fashion very common to many institutions. The central planning office first relied on reports requested from and generated by professionals in University Management Information Systems (UMIS). The requests for more and more specialized ad hoc reports multiplied and outstripped the ability of UMIS to produce them in a timely fashion. It also became clear that the information systems built to support operational needs were simply not useful in the support of analytical needs. Planning offices both centrally and in the schools began to hire their own programmers. With technological advances, offices began to develop their own planning data systems on micro- and mini-computers. Of course that created the problems of consistency of data between units and at different points in time. Two initiatives arose to attempt to resolve those problems. First, separate units began to develop joint information systems in support of planning. Those were useful but were limited to specific areas of analysis. Second, the community began to demand centralized information systems that were integrated, well-defined, and appropriate to support the strategic goals of the University.

The development of the central administrative information systems at Penn also paralleled those of other educational institutions. Ten years ago the responsibilities of UMIS consisted of application development and maintenance for several, distinct operation systems; i.e., finance/accounting, personnel/payroll, admissions/registration, facilities. They were systems developed for and "owned" by the central offices dealing in those areas.

UMIS supplied standard reports for operations and control purposes. Those reports were requested by the central offices and designed with little or no consultation with the broad base of users. As demands for ad hoc analytic reports and even separate information systems grew, UMIS began to see their own responsibilities taken over by various offices.

With more and more sophisticated, interested users, UMIS began to involve them in the development of large, central application systems. UMIS also created an information center and attempted to provide training and user access tools so that users could take advantage of the information systems themselves for their analytical needs.

In 1984, the University, responding to the recommendations of a University faculty committee on computing, appointed a vice provost for computing who became responsible for the planning and management of both academic and administrative computing on campus. The major result of that appointment has been significant progress in the University's computing and data communications capabilities.

Until recently, the management of information as a critical University resource held a lower priority than the development of enabling technology. Thus the major focus of the vice provost for computing was to establish a state-of-the-art fiber optic, campus network to support all institutional data communications needs. That was a major effort which required a great deal of time as well as human and financial resources. With the technology virtually in place and the demands from senior management for appropriate decision support systems, it became clear that the focus had to turn to the development of Penn's information resources.

Unfortunately, none of the efforts made in recent years by either the planning offices or by UMIS has been completely successful. In fact, UMIS had begun to plan an "Information Data Base" in about 1984. This project was established as a response to the community demand for an information system that would support management decision making rather than any particular operational needs. The problem with the project, however, was that it never had sufficient human resources devoted to it, and it was designed and developed with very little user participation. Clearly the solution to our institutional information problem had not been found.

Senior management began to realize that we could progress no further in fulfilling our management information needs without some major changes in direction and structure. The realization of that need led to the initiation of an effort to develop a strategic information resource management plan.

The Information Resource Management Planning Team, appointed by the President in June 1987, found that "Penn's existing applications development schedule was not systematically linked to University plans and priorities; University management was not sufficiently involved in developing and implementing actual system applications; short-term operational needs tended to take precedence over long-term planning; there was no data plan in place to guide the development of system applications; the University was populated by 'islands' of information, which are inevitably incomplete and which created data redundancy; mid- and upper-level managers had inadequate information on which to base decisions regarding future resource allocation."

The team then identified two areas requiring immediate attention in view of the University's planning priorities - facilities information and

faculty activities information - and recommended guidelines for identifying future information management priorities. The team also made a number of organizational recommendations. It pointed out the need for an information officer who could ensure the coordination of strategic, business and technological plans. It recommended a senior advisory group to advise the President on the priorities for information resource management as well as the creation of a Program and Policy team with wide representation to devise an implementation plan for the two critically needed information systems, to create a data plan for those systems, and to establish a methodology for application to comparable future efforts. Project Teams would then translate into technical design the information requirements specified by the Program and Policy Team.

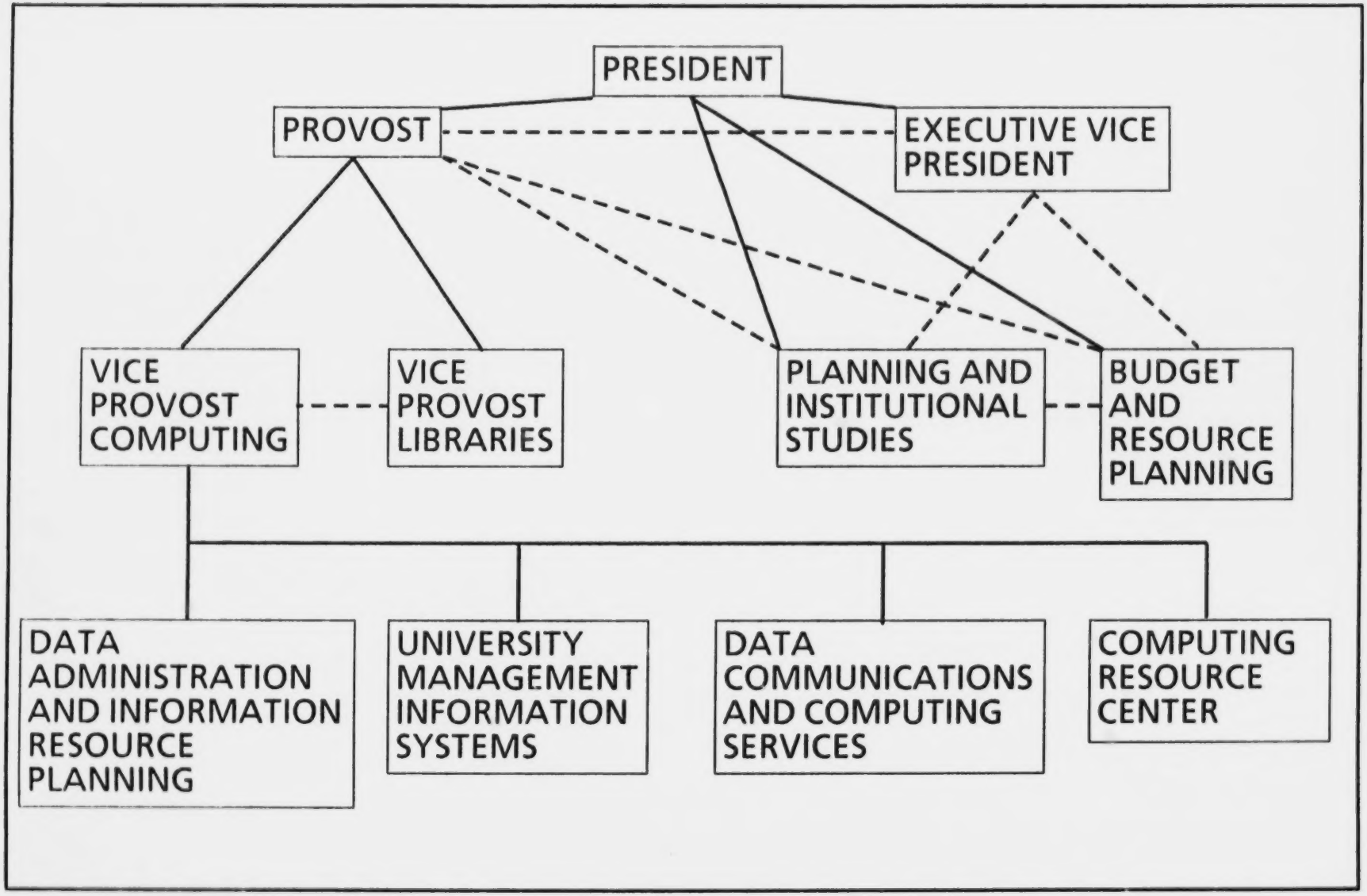
Penn's president responded to the team's recommendations in a number of ways. He created a data administration and information resource planning operation, set into motion the formation of the appropriate committees, and authorized the recommended development of the two critically needed information systems. The vice provost for computing, as the University's information officer, is to be the link between the University's strategic planning and its information resource planning.

The president also established a structure under which the new University librarian would work closely with the vice provost for computing in planning and developing all information resources at Penn. In addition, the office of the vice provost for computing began to undergo its own internal planning process. The enclosed organizational chart demonstrates the new structure for the planning and development of University information resources.

The vice provost for computing will work very closely with the vice provost for libraries, the director of planning and institutional studies, and the executive director of budget and resource allocation to maintain the link between University strategic priorities and the planning for information resources. The vice provost for computing will also work with the newly established committee structure to assure that a model for the development of new information systems is established and maintained. The Information Resource Management Planning Team recommended an overall structure which will be carried out by the vice provost for computing.

As it translates University plans into information needs, the Program and Policy Team and vice provost for computing will define the University's needs regarding identified information priorities; articulate critical policy issues concerning those areas; link the process of systems development to existing decision-making processes; identify data needed to support the systems, establishing data definitions and inter-relationships; evaluate defined information requirements in terms of current and planned projects, and within the context of the overall data plan; identify application priorities for technical project development; forecast financial and other resource constraints, and outline multi-year budgets for the development and installation of planned systems; ensure that future applications conform to, and offer critical support of, defined information priorities. This process is quite different from any other application development design effort and seems much more reasonable considering the need to plan information systems within the context of comprehensive University planning. That process has already begun with the development of

UNIVERSITY OF PENNSYLVANIA



Information Systems
Development Life Cycle

Process vs. Structure

	Senior Advisory Group	Chief Information Officer	Program and Policy Team*	Project Teams**
University Plans	R			
Information Priorities	R		T	
Translation of University Plans into Information Requirements		R	T	
System Development Project Plans		R		T
Project Implementation		R	T	

R = responsible T = team participation

* University Requirements Focus ** Technical Focus

a facilities information system. By this time next year, we will know how successful the effort has been.

The changes at Penn reflect general trends in a number of ways. First, planning became a formalized function in institutions of higher education only in the early 1970's and has been developing at a relatively rapid pace since then. Second, planning and institutional research have recently become decentralized functions in many institutions. More and more universities have not only school planning offices or at least officers but also planning or institutional research staff in many central offices, like the registrar, admissions, human resources, financial services, who interact with each other more or less well, depending on the institution. The School of Arts and Sciences at Cornell University has a planning operation quite separate from the central Office of Institutional Planning and Analysis. The University of Rochester has a separate office of research and information systems within its vice presidential area of enrollments, placement and alumni affairs. The Office of the Vice President for Arts and Sciences at Columbia University maintains its own planning and analysis operation.

Third, planning/institutional research staff have become much more expert in computing and interact to a much greater extent with administrative computing units at each institution. They worry about access and accuracy of data, about data administration, about new information management systems, and about decentralized input of data. At the University of Kansas, for example, the Office of Institutional Research maintains responsibility for data administration for the university.

Finally, the university management information units themselves are changing enormously and are thinking more about planning, decision support systems, user interaction and support, and management information systems. In fact, in a number of institutions administrative computing and planning or institutional research are directly connected through the same management. Carnegie Mellon, the University of Miami, and the University of Kansas maintain such structures.

Several smaller institutions have also taken a more active role in planning and institutional research and very often in conjunction with individuals involved in the development and maintenance of administrative information systems. Those institutions have been quite successful in joining together with other, similar institutions to share comparative institutional data as well as expertise in planning and administrative information systems.

The question which remains open at this time is whether the relatively recent efforts in data administration and information system planning will succeed in providing the support our institutions need to carry out the significant strategic planning required to succeed in the future. The organizational structures vary slightly from institution to institution depending on that institution's particular culture and history. The effort being made, however, is essentially the same. We are all trying valiantly to support institutional decision making through closer and closer connections between institutional planning and research and institutional information systems.

AIR Annual Conference

Paper Proposal Abstract

September 30, 1987

TITLE: The Organizational Relationship between Planning/Institutional Research and Administrative Information Systems in Higher Education

This paper will examine the changes in the organization and functions of offices of planning and institutional research and in the relationship between those offices and the offices in charge of administrative information systems or data processing. It will study one institution in depth and then compare its metamorphosis to that of other selected institutions in order to determine and analyze particular trends and to point out changes that have been particularly successful or problematic.